

Year of Burn	Species	Measures	File Name	Notes
1997	GUSA	looks like live shrub vol; 30 per transect	shrub97afterburn	Postburn measures - No headers in the data file - data appear to be live shrub volume (length, width, height) No Preburn measures — ?
1998	GUSA	Shrub vol; 10 per transect	shrub98preburn	Preburn measures 2/10/98 - canopy volume  No Postburn measures — <del>needs to be entered</del>
1999	GUSA	Shrub vol; 10 per transect	burn99shrubpre  shrubvolumes (same data in shrub9901)  burnshrub00	Preburn measures (2/99) in burn99shrubpre (all GUSA);  1st Year Postburn measures (9/22/99) on GUSA in "shrub9901" - appears they measured live canopy volume if shrub survived, and dead canopy volume only if shrub died  2nd Year Postburn measures (8/9/2000) for '99 burn
2000	EREF	Shrub vol; 10 per transect; only 3 treatment and 3 control transects for shrubs	shrubvolumes (same data in shrub9901)	Preburn measures (1/00) - just live canopy volume

~~1998 Post Burn~~

~~1st year 2000 Burns~~

~~2001 2 yrs~~

~~2002 1 yr~~

01

burnshrub00

1st Year Postburn measures (8/8/2000) with both live and dead canopy volume measurements for some shrubs (need to determine if/why protocol was different from 1999 post-burn measurements)

2001 EREF Shrub vol; 10 per transect shrubvolumes

burnshrub01

2nd Year Postburn measures for '00 burn- just has data for 2 burned and 2 control transects (presumably has to do with some control transects being burned in 01)

Preburn measures (1/9/01) - missing data for control 3 and 4 - analysis not possible unless data can be found

**Fire Project, Shrub Cover/Mortality**  
**Field Crew Instructions**

There are four replicate sites on each of a burned and unburned treatment for each year's newly burned area and control. Sampling of the previous years' burn and control site will also be conducted. Therefore, it is important to differentiate the two sites by indicating the burn-section number on each data sheet, and date the sheets for the current date of sampling to differentiate the two years that the sites will be sampled. Replicate, paired (burned and control) sites are numbered 1, 2, 3, and 4 by ordering from northwest to southeast locations, and by also giving a description of the location (such as, southeast corner - off road XX).

Each year may be different depending upon the shrub species that are in the burned section - see Daniel or Mark for species marked in a particular section pre-burn. For each species there are 10 shrubs that were marked prior to the burn in each of the four control and burn sites; ie., 4 reps X 2 treatments X 10 shrubs X each species. The shrubs were marked with ring-shanks along a transect.

Three measurements are made on each individual shrub, for both live and dead portions. Looking directly down on the shrub, first determine the widest portion of the LIVE part of the canopy, and measure to the nearest cm. Make another measurement of LIVE canopy PERPENDICULAR to the first. Third, measure LIVE height at tallest point. Repeat the above three measurements for the DEAD volume of the shrub. Write "0" on sheet if there are no live, or no dead organs.

- PREBURN98.WK1

PREBURN 1998 (2-10-98) SHRUB (GUSA)			
HEIGHT	LENGTH	WIDTH	SHRUB#
SITE 1 UNBURNED-WEST ROAD AT SIG			
22	41	33	1
23	29	27	2
26	44	42	3
25	39	32	4
28	44	34	5
21	45	43	6
18	40	30	7
27	42	34	8
31	45	33	9
25	39	35	10 (0)
SITE 1 BURNED			
20	35	33	1
26	36	34	2
25	45	39	3
24	49	35	4
25	32	32	5
21	34	28	6
30	49	36	7
27	44	34	8
18	25	20	9
22	37	35	10 (0)
SITE 2 BURNED-SW CORNER BY SIGN			
29	39	28	1
20	40	32	2
26	45	41	3
23	47	32	4
18	50	43	5
29	42	31	6
22	30	25	7
23	33	32	8
25	40	38	9
21	37	31	10 (0)
SITE 2-UNBURNED			
23	35	32	1
22	34	29	2
19	33	26	3
14	22	22	4
21	30	24	5
26	48	26	6
20	30	25	7
27	43	34	8
27	33	22	9
21	32	28	10 (0)
SITE 3 UNBURNED-EAST ROAD			
24	35	33	1
20	32	31	2
21	31	24	3
25	43	35	4
18	30	21	5
21	42	27	6

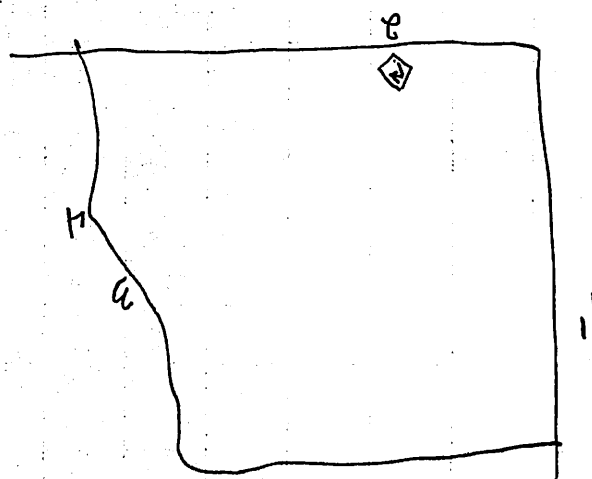
21	31	28	7
20	35	27	8
19	26	20	9
21	34	32	10 (0)
SITE 3 BURNED			
26	43	37	1
25	32	30	2
19	30	23	3
21	38	29	4
24	54	42	5
21	33	26	6
19	37	25	7
25	52	42	8
22	28	24	9
20	36	32	10 (0)
SITE 4 BURNED-EAST ROAD			
25	54	45	1
21	27	26	2
28	39	30	3
31	51	37	4
18	38	29	5
22	39	29	6
24	38	31	7
23	37	32	8
20	30	24	9
28	43	32	10 (0)
SITE 4 UNBURNED			
26	41	38	1
26	43	37	2
21	28	26	3
28	39	32	4
25	41	40	5
24	50	41	6
22	33	30	7
24	32	30	8
23	31	33	9
26	40	34	10 (0)

SITE 1 Unburned west road at sign NW CORNER Burn Shrub 1998

SITE 1 Unburned DATA 1998										Site 4 unburned									
Height	Length	Width	Shrub #	Species	Length	Width	Species	Length	Width	Height	Length	Width	Shrub #	Species	Length	Width	Species	Length	Width
22	41	33	1							26	41	38	1						
23	29	27	2							26	43	32	2						
26	41	42	3							21	28	26	3						
25	29	32	4							28	39	32	4						
28	44	34	5							25	41	40	5						
21	45	43	6							24	50	41	6						
18	40	30	7							22	33	30	7						
27	42	34	8							24	32	30	8						
31	45	33	9							23	31	33	9						
25	39	35	10(6)							26	40	34	10						
Site 1 burned										Site 3 unburned									
20	35	33	1							24	35	33	1						
26	36	34	2							20	32	31	2						
25	45	39	3							21	31	24	3						
24	49	35	4							25	43	35	4						
25	32	32	5							18	30	21	5						
21	34	28	6							21	42	27	6						
30	49	30	7							21	31	28	7						
27	44	34	8							20	35	27	8						
18	25	20	9							19	26	20	9						
22	27	35	10(6)							21	34	32	10						
Site 2 burned SW Corner by sign (P)										Site 3 burned									
29	39	28	1							26	43	32	1						
20	40	32	2							25	32	30	2						
26	45	41	3							19	30	23	3						
23	47	32	4							21	38	29	4						
18	50	43	5							24	54	42	5						
29	42	31	6							21	33	26	6						
22	30	25	7							19	37	25	7						
23	33	32	8							25	52	42	8						
25	40	38	9							22	28	24	9						
21	37	31	10(6)							20	26	32	10						
unburned																			
23	35	32	1							map on back									
22	34	29	2																
19	33	26	3																
14	22	22	4																
21	30	24	5																
26	48	26	6																
20	30	25	7																
27	43	34	8																
27	33	22	9																
21	32	28	10(6)																
Site 4 burned																			
25	54	45	1																
21	27	26	2																
28	39	30	3																
21	51	37	4																
18	38	29	5																
22	39	29	6																
24	38	31	7																
23	37	32	8																
20	30	24	9																
28	43	32	10																

Preburn 1998  
file name  
2/10/98

PREBURN 98. wk 1



2/



new

mm  
cm

Section 3 Year Burned 1998

Today's Date 18 June 1998

Treatment Burn Replicate 1

Shrub Species GUSA

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	14	12	7	X	18	14	6
2	—	—	—	—	17.5	12.5	8
3	6	6	3	X	25	19	7
4	—	—	—	—	25	10	9
5	—	—	—	—	20	15.5	9
6	18	17	9	X	18	11	2
7	6	6	9	X	29	18	12
8	23	19	17.5	X	32	23	13
9	14	12	9	X	10	9	3
10	—	—	—	—	14	16	3

Section 3 Year Burned 1998

Today's Date 18 June 1998

Treatment Control Replicate 1

Shrub Species GUSA

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	16	6	14	X	—	—	—
2	29	25	23	X	—	—	—
3	31	28	26	X	28	24	12
4	37	27	23	X	—	—	—
5	33	30	26	X	—	—	—
6	34	31	21	X	—	—	—
7	37	26	19	X	—	—	—
8	32	37	20	X	—	—	—
9	40	27	24	X	—	—	—
10	24	19	23	X	—	—	—

Section 3Year Burned 1998Today's Date 18 June 1998Treatment BURNReplicate 4Shrub Species GUSA

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	9	4	11				
2	10	8	4				
3	2	2	7				
4	21	15	5				
5	16	10	11				
6	15	17	9				
7	10	7	4				
8	3	3	8				
9	6	6	3	X	12	12	6
10	20	18	16	X	15	14	7

Section 3Year Burned 1998Today's Date 18 June 1998Treatment CONTROLReplicate 4Shrub Species GUSA

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	35	29	23	✓			
2	29	25	19	✓			
3	24	23	16	✓			
4	31	28	20	✓			
5	37	32	22	✓			
6	26	34	18	✓			
7	25	26	17	✓			
8	26	24	18	✓			
9	23	26	20	✓			
10	26	24	24	✓			

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Section 3 Year Burned 1998

Today's Date 18 JUNE 1998

Treatment Burn Replicate 3

Shrub Species GUSA

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	12	6	8				
2	3	3	8				
3	7	6	7	✓	19	12	5
4	11	3	6	✓	20	12	3
5	15	15	10 1/2				
6	11	4	11				
7	12	9	6				
8	10	7	7				
9	13	11	5				
10	15	9	5	✓	15	5	3

Not same shrub pre-burn

Section 3 Year Burned 1998

Today's Date 18 JUNE 1998

Treatment Control Replicate 3

Shrub Species GUSA

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	13	9	10				
2	9	4	6				
3	24	20	15				
4	34	29	17				
5	26	20	14	X			
6	38	24	14				
7	28	21	15	X			
8	34	25	15	X			
9	26	15	14	X			
10	30	29	14	X			

Section 3 Year Burned 1998

Today's Date 18 June 1998

Treatment BURN Replicate 2

Shrub Species GUSA

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1					12	11	13
2					19	21	11
3					32	27	12
4	19	16	12	✓	18	17	10
5					33	25	8
6					26	24	15
7					10	11	8
8					22	19	8
9					19	12	8
10	14	13	13	✓	15	16	10

Section 3 Year Burned 1998

Today's Date 18 June 1998

Treatment CONTROL Replicate 2

Shrub Species GUSA

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	25	25	17	✓			
2	29	25	20	✓			
3	25	24	14	✓			
4	12	16	9	✓			
5	13	7	10	✓			
6	40	37	19	✓			
7	22	21	13	✓			
8	21	29	20	✓			
9	17	27	15	✓			
10	20	22	15	✓			

Section 09 Year Burned 99

Today's Date 2/8/99 preburn

Treatment BBurn Replicate 3 Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length "	width "	height "		length	width	height
1	14.0	8.5	7.0				
2	14.0	10.0	8.0				
3	10.5	6.5	5.5				
4	9.5	6.0	6.0				
5	10.0	6.0	6.5				
6	12.0	7.25	7.0				
7	13.0	9.75	8.75				
8	15.75	13.0	5.50				
9	17.0	13.5	10.25				
10	25.5	18.75	6.75				

Section 9 Year Burned 99

Today's Date 2/8/99

Treatment Control Replicate 3 Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length "	width "	height "		length	width	height
1	11.75	11.0	6.25				
2	live 8.25 Dead 13.0	live 7.5 Dead 13.0	live 6.25 Dead 13.5				
3	16.25	10.5	8.0				
4	18.0	13.5	7.75				
5	12.0	11.0	7.50				
6	13.25	10.0	7.75				
7	live 18.25 Dead 12.5	live 11.5 Dead 7.0	live 7.0 Dead 7.0				
8	6.75	5.50	5.0				
9	11.25	9.0	7.5				
10	14.0	13.25	8.25				

Section 1 Year Burned 99Today's Date 2/8/99Treatment 2 Burn Replicate 2 Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length"	width"	height"		length"	width"	height"
1	23.0	23.0	12.0		20.0	19.0	8.0
2	14.5	14.0	8.0				
3	18.5	14.25	10.0				
4	9.75	6.0	6.0				
5	18.25	16.0	9.0				
6	19.0	18.0	8.75				
7	15.0	12.5	7.0				
8	13.0	13.0	7.0				
9	16.5	16.0	8.25				
10	15.5	14.0	7.0				

Section 1 Year Burned 99Today's Date 2/8/99Treatment 1 Control Replicate 2 Shrub Species

Shrub #	LIVE			resprout check if yes	DEAD		
	length"	width"	height"		length	width	height
1	16.0	14.0	8.50				
2	16.0	12.25	7.25				
3	12.75	11.0	5.75				
4	12.0	8.5	7.25				
5	11.5	7.25	7.0				
6	15.0	8.75	6.25				
7	16.75	12.75	4.50				
8	11.75	11.0	6.75				
9	10.0	5.75	6.0				
10	13.5	12.0	7.0				

Section 21 Year Burned 99

Today's Date 2/8/99 pre burn

Treatment 2 Burn Replicate 1

Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length"	width"	height"		length	width	height
1	18.5	13.5	9.0				
2	13.0	10.5	7.5				
3	8.25	8.25	5.25				
4	8.5	8.25	5.0				
5	10.5	8.75	5.5				
6	14.0	11.0	4.75				
7	11.5	9.0	5.0				
8	10.0	8.5	5.75				
9	11.0	9.5	5.0				
10	11.5	8.25	5.5				

Section 21 Year Burned 99

Today's Date 2/8/99 pre burn

Treatment 1 Control Replicate 1

Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length"	width"	height"		length	width	height
1	9.5	8.75	5.0				
2	12.75	11.5	5.5				
3	9.0	7.5	4.75				
4	10.5	9.0	7.0				
5	12.75	9.5	5.5				
6	9.5	9.0	5.75				
7	13.0	11.0	8.0				
8	13.0	10.25	5.5				
9	6.75	5.75	4.5				
10	12.25	10.75	6.0				

Section 12 Year Burned 99

Today's Date 2/8/99 pre burn

Treatment 2 Burn Replicate 4

Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length"	width"	height"		length	width	height
1	15.75	12.25	9.75				
2	10.5	8.25	4.75				
3	11.0	8.25	6.75				
4	14.5	9.0	6.50				
5	9.0	10.5	8.75				
6	12.75	11.25	5.50				
7	10.25	6.25	6.00				
8	18.5	15.25	8.00				
9	15.0	11.50	10.0				
10	18.50	10.50	6.0				

Section 12 Year Burned 99

Today's Date 2/8/99 pre burn

Treatment Control Replicate 4

Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length"	width"	height"		length	width	height
1	14.5	11.5	7.75				
2	13.75	11.75	7.50				
3	13.0	12.0	8.75				
4	22.5	18.0	10.0				
5	17.5	14.0	7.75				
6	13.75	11.25	7.0				
7	11.5	8.75	6.25				
8	12.75	8.50	8.25				
9	14.75	11.0	6.25				
10	8.0	5.0	6.0				



~~doublecheck these~~ OK  
~~data sheets w/ Dan Mit.~~

Section Allenbaugh Year Burned 1999  
wer 45

Today's Date 22 Sept. 1999

Treatment Burn Replicate 1 Shrub Species GUSA

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	22	11	22	✓	0	0	0
2	0	0	0	NO	27	25	14
3	18	9	13	✓	0	0	0
4	<del>20</del>	<del>10</del>	<del>20</del>	NO	32	17	11
5	38	25	23	✓	35	10	20
6	39	16	18	✓	0	0	0
7	21	21	13	✓	0	0	0
8	32	25	19	✓	0	0	0
9	30	18	19	✓	0	0	0
10	15	9	13	✓	0	0	0

Section Allenbaugh Year Burned 1999

Today's Date 22 Sept 1999

Treatment Control Replicate 1 Shrub Species GUSA

Shrub #	LIVE			resprout check if yes (new growth)	DEAD		
	length	width	height		length	width	height
1	46	38	29	✓	0	0	0
2	37	31	21	✓	0	0	0
3	37	24	17	✓	0	0	0
4	38	24	23	✓	0	0	0
5	30	19	18	✓	0	0	0
6	37	30	19	✓	0	0	0
7	45	33	12	✓	0	0	0
8	37	33	26	✓	0	0	0
9	34	21	18	✓	0	0	0
10	39	14	16	✓	33	20	18

Section JackPot wcr #112 Year Burned 1999

Today's Date 22 SEP, 1999

Treatment Burn

Replicate 2

Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	32	21	19	✓	12	6	1
2	26	15	18	✓	0	0	0
3	23	20	17	✓	0	0	0
4	27	23	18	✓	0	0	0
5	15	14	6	✓	0	0	0
6	35	21	15	✓	9	15	4
7	30	24	17	✓	0	0	0
8	28	17	17	✓	0	0	0
9	15	13	12	✓	0	0	0
10	35	5	17	✓	10	4	4

Section JackPot Year Burned 1999

Today's Date 22 SEP, 1999

Treatment Control

Replicate 2

Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	19	7	9	✓	7	7	8
2	39	29	14	✓	0	0	0
3	26	26	16	✓	0	0	0
4	32	27	19	✓	0	0	0
5	34	27	13	✓	0	0	0
6	33	18	17	✓	0	0	0
7	34	24	18	✓	0	0	0
8	29	13	16	✓	0	0	0
9	27	16	13	✓	0	0	0
10	32	22	22	✓	0	0	0

Section Wild Horse <sup>wcr #96</sup> Year Burned 1999

Today's Date 22 Sept. 1999

Treatment Burn Replicate 3

Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	25	22	20	✓	0	0	0
2	35	21	20	✓	0	0	0
3	31	23	16	✓	0	0	0
4	8	5	9	✓	10	7	4
5	41	31	21	✓	0	0	0
6	16	12	17	✓	0	0	0
7	0	0	0	NO	14	4	8
8	0	0	0	NO	17	10	13
9	20	11	14	✓	37	9	20
10	34	33	22	✓	0	0	0

Section Wild Horse Year Burned 1999

Today's Date 22 Sept. 1999

Treatment Control Replicate 3

Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	44	40	28	✓	0	0	0
2	44	42	22	✓	0	0	0
3	44	43	25	✓	0	0	0
4	60	55	26	✓	0	0	0
5	50	43	24	✓	0	0	0
6	40	35	24	✓	0	0	0
7	43	33	21	✓	0	0	0
8	36	22	18	✓	0	0	0
9	29	24	18	✓	0	0	0
10	37	15	22	✓	0	0	0

Section Owl Creek <sup>WCR #108</sup> Year Burned 1999

Today's Date 22 Sept. 1999

Treatment Burn Replicate 4 Shrub Species \_\_\_\_\_

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	10	5	11	✓	0	0	0
2	31	23	17	✓	0	0	0
3	19	12	18	✓	0	0	0
4	34	33	18	✓	0	0	0
5	13	10	12	✓	0	0	0
6	36	28	17	✓	0	0	0
7	44	33	18	✓	0	0	0
8	0	0	0	NO	19	11	3
9	29	18	19	✓	0	0	0
10	14	9	19	✓	0	0	0

Section Owl Creek Year Burned 1999

Today's Date 22 Sept. 1999

Treatment Control Replicate 4 Shrub Species \_\_\_\_\_

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	49	41	19	✓	0	0	0
2	0	0	0	NO	18	11	16
3	40	21	22	✓	0	0	0
4	66	33	21	✓	0	0	0
5	41	34	23	✓	0	0	0
6	40	31	25	✓	0	0	0
7	61	27	20	✓	0	0	0
8	16	5	12	✓	8	3	8
9	33	29	21	✓	0	0	0
10	35	31	24	✓	0	0	0

Section \_\_\_\_\_

Year Burned 1999Today's Date 9 Aug 2000Treatment Burn*I think this is right*  
*Southern side*Replicate JackpotShrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	32	22	8		NO DEAD	NO DEAD	NO DEAD
2	25	16	14		NO DEAD	NO DEAD	NO DEAD
3	34	22	12		NO DEAD	NO DEAD	NO DEAD
4	17	15	8		4	4	12
5	13	4	6		NO DEAD	NO DEAD	NO DEAD
6	28	17	6		17	4	10
7	26	23	12		15	6	15
8	20	15	10		NO DEAD	NO DEAD	NO DEAD
9	10	12	4		NO DEAD	NO DEAD	NO DEAD
10	23	14	9		23	14	18

LOOKS LIKE  
A NEW GIVE

Section \_\_\_\_\_

Year Burned 1999Today's Date 9 Aug 2000Treatment Control*NORTH*Replicate JackpotShrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	18	6	5		0.1	0.1	14
2	15	13	10		no dead		
3	23	20	13		13	4	14
4	23	28	15		no dead		
5	22	9	8		4	7	14
6	9	4	7		16	8	14
7	20	19	11		12	8	19
8	24	25	10		15	7	16
9	18	16	12		no dead		
10	33	8	16		13	10	20

dead in  
middle of live

Section \_\_\_\_\_ Year Burned 1999Today's Date 09 Aug 2000Treatment Burn Replicate Owl Shrub Species \_\_\_\_\_

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	13	11	7		no	dead	
2	32	27	20		7	5	18
3	27	17	12		no	dead	
4	25	19	12.5		no	dead	
5	11	8	9.5		no	dead	
6	34	28	15		no	dead	
7	23	23	13		no	dead	
8	41	22	14		no	dead	
9	38	34	20.5		no	dead	
10	58	35	19.5		no	dead	

Section \_\_\_\_\_ Year Burned 1999Today's Date 09 Aug 2000Treatment Control Replicate Owl Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	37	32	12		14	10	18
2	<del>no live</del>				18	6	5
3	42	31	18.5		no	dead	
4	47	44	22		12	7	18
5	42	31	21		no	dead	
6	40	35	20		no	dead	
7	55	27	20		no	dead	
8	<del>no live</del>				2	1	8
9	42	32	16		12	5	21
10	45	24	19		10	5	22

Section \_\_\_\_\_

Year Burned 2000Today's Date 9 Aug 2000Treatment BurnReplicate WildhorseShrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	39	39	20		39	39	34
2	10	7	9		7	7	21
3	18	14	14		6	4	17
4	9	13	9		19	16	18
5	12	4	7		NONE	NONE	NONE
6	25	18	12		no dead		
7	10	9	11		no dead		
8	GONE	GONE	GONE		GONE	GONE	GONE
9	GONE	GONE	GONE		GONE	GONE	GONE
10	15	10	10		NO DEAD	NO DEAD	NO DEAD

Section \_\_\_\_\_

Year Burned 1999Today's Date 9 Aug 2000Treatment ControlReplicate WildhorseShrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	23	31	17	looks like it's dying off or coming back	37	36	26
2	39	35	28		no dead		
3	31	29	21		35	38	26
4	60	62	24		no dead		
5	39	20	19		34	36	23
6	no	line			37	30	23
7	34	20	20		10	10	19
8	24	19	21		23	27	27
9	19	15	16		no dead		
10	34	26	22		no dead		

dead interspersed w/ live

Section \_\_\_\_\_

Year Burned 1999Today's Date 10 Aug 2000Treatment BurnReplicate AllenbaughShrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1 Gusa		None			18	14	19
2 Gusa	14	18	10.5			None	
3 Gusa		None			18	10	3
4 Gusa	4	2	6	budding out of wood	9	3	4
5 Gusa		None			14	17	2
6 Gusa	25	23	110		8	7	18
7 Gusa	13	10	10			None	
8 Chui	35	34	18			None	
10 Gusa	36	36	18			None	
9		None			16	6	12

Section \_\_\_\_\_

Year Burned 1999Today's Date 10 Aug 2000Treatment ControlReplicate AllenShrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1 Gusa	30	22	17		25	23	23
2	15	28	11		no dead		
3	no live				29	22	12
4	22	25	11		28	23	24
5	20	8	14		22	11	14
6	30	25	15		no dead		
7	19	23	12		no dead		
8	27	27	14		no dead		
9	30	14	13		no dead		
10	no live				38	33	16

Chui



Section 26 Year Burned Burn 2000 Today's Date 8 Aug 2000

Treatment Burn Replicate 1 Shrub Species EREF

Shrub #	LIVE (cm)			resprout check if yes	DEAD		
	length	width	height		length	width	height
1 EREF	40cm	27cm	25cm	✓	None		
2 EREF	23	14	20	✓	None		
3 EREF	29	30	23	✓	None		
4 EREF	39	33	18	✓	None		
5 EREF	39	33	17	✓	None		
6 EREF	25	24	20	✓	None		
7 EREF	12	7	13	✓	None		
8 EREF	28	19	17	✓	None		
9 EREF	24	29	22	✓	None		
10 EREF	28	20	29	✓	None		

Section 23 Year Burned 2000 Today's Date 8 Aug 2000

Treatment Control Replicate 1 Shrub Species eref

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	21	24	21		3	4	20.5
2	10	15	18		2	4	15
3	19	32	28		19	28	36
4	20	28	20		17	25	25
5	19	28	16		10	22	20
6	28	33	20	✓	21	24	22
7	15	29	26	✓	1	1	32
8	6	16	18		5	10	22
9	32	32	20	✓	8	12	24
10	20	34	17		2	20	24

Section 23Year Burned 2000Today's Date 8 Aug 2000Treatment ControlReplicate 2Shrub Species EREF

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	46	44	23		10	13	21
2	33	24	21.5		None		
3	54	28	20		None		
4	32	56	27		8	6	40
5	33	40	23		4	7	37
6	28	19	20		0.5	0.5	18.5
7	31	20	19		None		
8	39	28	22		None		
9	23	38	16		18	9	23
10	23	19	29		6	9	37

Section 26Year Burned 2000Today's Date 8 Aug 2000Treatment BurnReplicate 2Shrub Species EREF

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	28	32	15	✓	26	2	9
2	34	17	22	✓	3	.5	3
3	28	24	16	✓	6	1	4
4	39	38	19	✓	12	1	9
5	42	38	25	✓	13	3	13
6	29	27	13	✓	3	2	8
7	44	42	18	✓	15	2	8
8	29	22	14	✓	NONE		
9	25	19	17	✓	10	3	9
10	35	23	20	✓	7	1	6

Section 26 Year Burned 2000

Today's Date 08 Aug 2000

Treatment Burn Replicate 3 Shrub Species EREF

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
<del>25</del>	30	38	17			None	
<del>26</del>	25	45	24			None	
3	39	48	31			None	
4	44	52	23			None	
5	33	46	23			None	
6	36	48	22			None	
7	32	22	18			None	
8	18	39	27			None	
9	45	55	22			None	
10	45	35	28			None	

Section 27 Year Burned 2000

Today's Date 08 Aug 2000

Treatment Control Replicate 3 Shrub Species EREF

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	44	46	26			None	
2	16	43	23			None	
3	13	28	13	✓		None	
4	30	40	25			None	
5	20	17	15			None	
6		None			30	22	29
7	18	25	15			None	
8	22	24	19			None	
9	23	26	17			None	
10	17	26	18			None	

Section 26 Year Burned 2000Today's Date Aug 8 2000Treatment Burn Replicate 4Shrub Species Eref

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
22	31	51	29	✓	20	21	24
21	43	31	17		None		
3	32	36	24		None		
4	32	40	20		13	102	10
5	43	45	22	✓	None		
6	50	49	19		None		
7	34	65	30		None		
8	30	40	22		None		
9	31	50	20		None		
10	42	50	25		None		

Section 26 Year Burned 2000Today's Date 8 Aug 2000Treatment Control Replicate 4Shrub Species Eref

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	35	44	24		16	15	25
2	30	43	26		None		
3	42	48	26		None		
4	4	7	16		15	22	26
5	35	42	29		35	42	29
6	31	39	22		20	20	20
7	42	37	22		14	17	18
8	27	40	19		23	21	24
9	42	50	27		14	50	30
10	61	52	26		48	32	32

dead +  
live  
mixed

Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W (cm)	Dead L x W (cm)	Resprout L x W (cm)
26	BURN	2	2000	REF	1	25x24x15	NONE	✓
↓	↓	↓	↓	↓	2	22.5x14x17	NONE	✓
↓	↓	↓	↓	↓	3	29x11x20	NONE	✓
↓	↓	↓	↓	↓	4	— NAIL	MISSING	—
↓	↓	↓	↓	↓	5	38x36x18	NONE	✓
↓	↓	↓	↓	↓	6	24x16x19	NONE	✓
↓	↓	↓	↓	↓	7	22x10x14	NONE	—
↓	↓	↓	↓	↓	8	12x5x18	NONE	✓
↓	↓	↓	↓	↓	9	20x14x14	NONE	✓
↓	↓	↓	↓	↓	10	37x17x18	NONE	✓

5' low  
with  
ribbing

Burn Study  
Shrub dimensions

rec 27 Aug 2001

Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W (cm)	Dead L x W (cm)	Resprout L x W (cm)
26	BURN	1	2000	REF	1	34x23x27	NONE	✓
↓	↓	↓	↓	↓	2	17x14x21	NONE	✓
↓	↓	↓	↓	↓	3	36x31x29	NONE	✓
↓	↓	↓	↓	↓	4	26x19x19	NONE	✓
↓	↓	↓	↓	↓	5	31x16x28	NONE	✓
↓	↓	↓	↓	↓	6	30x19x22	NONE	✓
↓	↓	↓	↓	↓	7	12x12x13	NONE	✓
↓	↓	↓	↓	↓	8	29x17x19	5x4x17	✓
↓	↓	↓	↓	↓	9	26x21x25	NONE	✓
↓	↓	↓	↓	↓	10	35x14x28	14x14x19	✓

Burn Study  
Shrub Dimensions  
recorded 27 Aug 2001

# Shrub - Fire

File = shrub 9900

Section 26 Year Burned 2000 Today's Date 1-18-00  
*pre-burn measurement*

Treatment Control NE Replicate 1 C Shrub Species EROF

Shrub #	LIVE <u>cm</u>			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	32	36	32				
2	27	<del>52</del>	27				
3	27	51	34				
4	32	38	27				
5	34	40	26				
6	43	41	29				
7	32	42	30				
8	37	44	33				
9	51	41	28				
10	35	45	27				

Section 26 Year Burned 2000 Today's Date 1-18-00  
*pre-burn measurement*

Treatment Burn NE Replicate 1 B Shrub Species EROF

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	38	49	31				
2	20	30	26				
3	46	60	33				
4	33	49	23				
5	47	54	34				
6	45	39	27				
7	26	13	23				
8	38	33	28				
9	41	26	25				
10	42	32	34				



Section 26 NW Year Burned 2000 Today's Date 1-18-00

*pre burn measurements*

Treatment Control Replicate 2 NW Shrub Species EROF

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	51	52	31				
2	40	32	31				
3	54	42	29				
4	80	53	42				
5	57	43	36				
6	45	32	28				
7	50	30	35				
8	52	26	26				
9	37	27	26				
10	47	35	38				

Section 26 NW Year Burned 2000 Today's Date 1-18-00

*pre burn measurements*

Treatment Burn Replicate 2 NW Shrub Species EROF

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	51	46	27				
2	45	37	31				
3	46	36	32				
4	75	68	42				
5	60	53	34				
6	42	29	26				
7	52	32	33				
8	43	33	36				
9	32	35	23				
10	42	30	27				

Section 26 Year Burned 2000 Today's Date 1-18-00  
*pre-burn measurement*

Treatment Control Replicate 4 WS Shrub Species EROF

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	40	32	24				
2	53	36	28				
3	62	46	26				
4	30	18	27				
5	48	42	25				
6	44	41	22				
7	44	37	20				
8	50	44	25				
9	66	50	31				
10	56	50	35				

Section 26 Year Burned 2000 Today's Date 1-18-00  
*pre-burn measurement*

Treatment Burn Replicate 4 WS Shrub Species EROF

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	51	24	28				
2	33	29	24				
3	35	26	29				
4	38	39	29				
5	54	47	31				
6	55	37	23				
7	66	53	34				
8	28	37	28				
9	35	43	25				
10	50	51	29				



Section 26 Year Burned 2000 Today's Date 1-18-00

*pre-burn measurement*

Treatment Control Replicate 3 W N Shrub Species EROF

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	36	51	33				
2	53	43	31				
3	28	28	17				
4	35	28	28				
5	21	22	20				
6	34	29	29				
7	22	17	20				
8	17	19	25				
9	28	24	19				
10	31	22	27				

Section 26 Year Burned 2000 Today's Date 1-18-00

*pre-burn measurement*

Treatment Burn Replicate 3 W N Shrub Species EROF

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	38	42	31				
2	45	35	23				
3	48	37	34				
4	49	44	26				
5	44	35	27				
6	62	51	32				
7	44	29	25				
8	34	38	31				
9	37	49	30				
10	42	52	35				

## BURN STUDY - SHRUB DIMENSIONS

Data Collection Date 27 Aug 2001 Recorder D. Canham + D. Welch

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W (cm)	Dead L x W (cm)	Resprout L x W (cm)
27	CONTROL	3	2000	EREF	10	43 X 52 X 32	33 X 13 X 28   38 X 19 X 28	✓
					9	—	43 X 36 X 27	✓
					8	30 X 12 X 26	12 X 10 X 20	✓
					7	25 X 10 X 22   11 X 8 X 21	28 X 24 X 20   32 X 15 X 22	✓
					6	16 X 8 X 23	33 X 26 X 18	✓
					5	32 X 35 X 50	NONE	✓
					4	32 X 10 X 20	NONE	✓
					3	36 X 12 X 25   37 X 17 X 25	22 X 16 X 24	✓
					2	NAIL LYING BESIDE CAGE		
					1	—	32 X 32 X 26	✓
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W (cm)	Dead L x W (cm)	Resprout L x W (cm)
28	BURN	4	2000	EREF	1	47 X 42 X 26	NONE	✓
					2	48 X 35 X 21	NONE	✓
					3	50 X 39 X 28	NONE	✓
					4	37 X 34 X 20	NONE	✓
					5	45 X 30 X 26	NONE	✓
					6	49 X 36 X 21	NONE	✓
					7	62 X 54 X 31	NONE	✓
					8	36 X 22 X 19	NONE	✓
					9	44 X 21 X 18	NONE	✓
					10	50 X 33 X 24	NONE	✓

**BURN STUDY - SHRUB DIMENSIONS**Data Collection Date 27 Aug 2001 Recorder D. Conner / D. Welch

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W (cm)	Dead L x W (cm)	Resprout L x W (cm)
26	BURN	3	2000	EREF	1	35 x 34 x 29	30 x 19 x 20	✓
					2	50 x 20 x 26	NONE	✓
					3	55 x 50 x 31	NONE	✓
					4	42 x 40 x 27	NONE	✓
					5	129 x 30 x 22	13 x 10 x 22	✓
					6	40 x 44 x 26	NONE	✓
					7	39 x 30 x 23	NONE	✓
					8	30 x 24 x 27	NONE	✓
					9	54 x 42 x 20	14 x 10 x 18	✓
					10	61 x 54 x 2 x 37	NONE	✓
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W (cm)	Dead L x W (cm)	Resprout L x W (cm)
					1			
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			

BURN STUDY - SHRUB DIMENSIONS

L. Hayley  
N. Kaplan

Date April 5, 2001

Plot 3C for 2001  
4C for 2000  
Species 2ref

Shrub#	Live	Dead	Resprout	Live	Dead	Resprout
1	36 X 29 X 23					
2	44 X 34 X 20					
3	51 X 38 X 17					
4	22 X 8 X 21					
5	42 X 25 X 22					
6	37 X 22 X 21					
7	42 X 30 X 19					
8	39 X 25 X 17					
9	53 X 26 X 30					
10	60 X 44 X 24					
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

dominant

L. Hartley  
N. Kaplan

## BURN STUDY - SHRUB DIMENSIONS

Plot 4C for 2001Date April 6, 20013C for 2000Species EREF

Species \_\_\_\_\_

Shrub#	Live	Dead	Resprout	Live	Dead	Resprout
1	47X40X25					
2	39X19X21					
3	26X12X9					
4	39X24X22					
5	15X10X17					
6	32X33X22					
7	23X16X14					
8	25X15X17					
9	29X22X18					
10	33X19X24					
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

REVISED - 22 JAN 2001 BY NEK.

DATA COLLECT 09 JAN 2001 FOR  
OPPO/SHKUB MORTALITY STUDY.

Private

2001 Burn

Sec 23

2B

2C

1B

1C

(OLD 2C  
2000)  
4B

(OLD 1C  
2000)  
3B

CTY 114

Sec 27

4C (OLD 3C  
For 2000)

3C (OLD 4C  
For 2000)

CTY  
45

2B  
(2000)

1B  
(2000)

Sec 26

3B(2000)

4B(2000)  
2000 Burn

x  
x  
x  
x  
x  
x  
x  
x  
x  
x  
x

--- -> 2-track  
x x x -> fence line

## ABBREVIATED CURRICULUM VITAE

### Laurel M. Hartley

**POSITION:** Education and Outreach Coordinator/Research Associate, Shortgrass Steppe Long Term Ecological Research, Department of Forest Sciences, Colorado State University, Fort Collins, CO 80523, [Hartley@cnr.colostate.edu](mailto:Hartley@cnr.colostate.edu), (970)491-7410

### EDUCATION

1996	BS	Southwestern University	Biology
1999	MS	Colorado State University	Zoology

### EXPERIENCE



1995	Research Experience for Undergraduates NSF and Avila College	Research of Caribbean Herpetofauna
1995	The Natural History Museum, London	Intern with Zoology Collections
1996-1999	Colorado State University, Dept. of Biology	Graduate Teaching Assistant
1999	The Denver Museum of Nature and Science, Volunteer Staff Member Education Collection	
1999	SGS-LTER, Colorado State University	Research Associate
2000	Northeast Independent School District San Antonio, Texas	Substitute Teacher
Current	SGS-LTER, Colorado State University	Education and Outreach Coordinator/Research Associate












### AFFILIATIONS

American Association of Museums	Sigma Xi
Ecological Society of America	Society for Integrative and Comparative Biology
American Society of Ichthyologists and Herpetologists	

### RECENT PUBLICATIONS


- Hartley, L. M., R. E. Glor, A. L. Sproston, R. Powell, and J. S. Parmerlee. (2000) Germination rates of seeds consumed by two species of Rock Iguanas (*Cyclura* spp.) in the Dominican Republic. *Caribbean Journal of Science*. 36(1-2):149-151.
- Hartley, L. M., M. J. Packard, and G. C. Packard. (2000) Accumulation of lactate by supercooled hatchlings of the painted turtle (*Chrysemys picta*): implications for overwinter survival. *Journal of Comparative Physiology B*. 170:45-50.
- Sproston, A. L., R. E. Glor, L. M. Hartley, E. J. Censky, R. Powell, and J. S. Parmerlee. (1999) Niche differences among three sympatric species of *Ameiva* (Reptilia: Teiidae) on Hispaniola. *Journal of Herpetology*. 33:131-136.
- Hartley, L. M., R. Powell, J. S. Parmerlee. (1998) Species description: *Ameiva lineolata* (Reptilia: Teiidae). *Catalogue of American Amphibians and Reptiles*.


 WebMail - burn design 

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**Date Sent:** Monday, January 08, 2001 12:19 PM

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**Cc:** mark <mark>, 

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**Status:** ☐ Urgent ☒ New

Return-Path: <dannym@cnr.colostate.edu>  
Received: from pantex (pantex [129.82.105.121])  
by picea.cnr.colostate.edu (8.11.1/8.11.1) with SMTP id f08K7Wc02909;  
Mon, 8 Jan 2001 13:07:32 -0700 (MST)  
Message-Id: <3.0.6.32.20010108131905.01243860@picea.cnr.colostate.edu>  
X-Sender: dannym@picea.cnr.colostate.edu  
X-Mailer: QUALCOMM Windows Eudora Light Version 3.0.6 (32)  
Date: Mon, 08 Jan 2001 13:19:05 -0600  
To: mball@fs.fed.us  
From: "Daniel G. Milchunas" <dannym@cnr.colostate.edu>  
Subject: burn design  
Cc: mark, nicolek, hartley  
Mime-Version: 1.0  
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Hi Mark -- We have a little problem here in terms of the burn design. We have been doing the sampling for each burn for two years (primarily to follow the cactus and shrub response longer than just the year of the burn). The 2001 burn in sec 23 is next to the 2000 burn which has 2 of our 4 'control' transects for the 2000 burn. Is there some way we can 1) not burn just the local control areas in 23 this year?, and 2) have some input/coordination on which sections are chosen when? If you already have sections chosen for burning in the future, then we could choose our controls so we don't loose them in the future. We are going to try to get our stuff done Tues afternoon, but may or may not get done since we only have the afternoon. Let us know if you know where the 2002 burns will be so we can avoid using them as controls this year. Daniel

\*\*\*\*\*

Daniel G. Milchunas  
Rangeland Ecosystem Science Dept and  
Natural Resource Ecology Laboratory



We did not measure  
shrubs & count cactus  
pads on Control 3 and 4  
on 09 Jan 2000 for the  
2001 Burn

These measurements will be  
collected later in Jan. 2001

## 2001 burn

used section 23 only, because 12 was very different veg.

But 23 was 2 of the controls for 2000 burn - these would be lost in 2001 burn for 2<sup>nd</sup> yr of sampling.

SO - we put transects 1+2 Burn on east side of 23 + control in sec 24. We left controls 1+2 from 2000 burn in sec 27, which will be used for both 2000 + 2001 controls (were<sup>c</sup> 1+2, now also c 3+4 for 2001). The ~~B 3+4 for~~ C 3+4 for 2000 become B 3+4 for 2001 after they are burnt.

See attached map

REVISED - 22 JAN 2001 BY NEK

N ↑

DATA COLLECT 09 JAN 2001 FOR  
OPID/SIXUB MORTALITY STUDY.

Private

2001 Burn

Sec 23

2B

2C

1B

1C

(OLD 2C  
2000)

4B

(OLD 1C  
2000)

3B

CTY 114

Sec 27

4C (OLD 3C  
FOR 2000)

3C (OLD 4C  
FOR 2000)

CTY  
45

Sec 26

2B  
(2000)

1B  
(2000)

3B(2000)

4B(2000)  
2000 Burn

--- → 2-track  
xxx → fence line

Control

Cont 1	T1	L	Shrub W cm	H
1		41	34	19
2		40	32	20
3		44	42	26
4		53	51	24
5		35	22	20
6		24	19	28
7		38	32	25
8		39	28	32
9		34	27	19
10		31	20	26

Lactent

	2	I	D
1	5	0	0
2	3	0	2
3	8	1	6
4	11	0	0
5	6	0	8
6	5	0	4
7	3	0	2
8	6	0	0
9	7	0	0
10	4	0	1

Burn Study - 2001 Burn

Shrub & Oppo Mortality

Data collected 09 Jan 2001

by D. Milchunas, M. Lindquist, L. Hartley,  
& N. Kaplan.

Transects 1 & 2 - off 2 track  
N of 114, past intersection of  
114 & 45.

(Transect 1 south of transect 2)

Transects 3 & 4 Control are  
old transect 1 & 2 controls  
from 2000 Burn Sites.

Transects 3 & 4 Burn are old  
transects 1 & 2 Controls  
from 2000 Burn Sites.

01 Jan 2001

09 Jan 2001

~~2001~~ 2001 Burn - Burn  
Cactus Study T-1

<u>Cactus #</u>	<u>L</u>	<u>I</u>	<u>D</u>
1	3	0	5
2	9	0	6
3	10	0	9
4	6	0	6
5	6	1	4
6	13	0	8
7	9	0	6
8	14	0	5
9	11	0	1
10	9	0	3

Burn 2001 - Burn Transect #1  
Shrub Study = (EREF)  
Shrub #      L x W x H (cm)

1	36 x 30 x 20
2	27 x 23 x 21
3	43 x 31 x 20
4	32 x 20 x 15
5	26 x 17 x 23
6	22 x 20 x 14
7	33 x 25 x 27
8	30 x 13 x 21
9	40 x 22 x 22
10	33 x 27 x 21

04 Jan 2001

2001 Burn B-2  
Shrub Study (Eref)

Shrub #	L x W x H
1	33 x 19 x 20
2	22 x 13 x 21
3	30 x 17 x 21
4	23 x 21 x 20
5	36 x 20 x 18
6	49 x 21 x 26
7	23 x 12 x 20
8	43 x 29 x 26
9	45 x 21 x 28
10	42 x 23 x 17

(Transect 2  
Burn)

2001 Burn ~~B-2~~ - B2

09 Jan 2001

<u>Cactus Patch #</u>	<u>L</u>	<u>I</u>	<u>D</u>
1	11	0	5
2	4	0	5
3	11	0	6
4	7	0	2
5	14	0	3
6	24	0	4
7	8	0	4
8	7	1	7
9	12	0	2
10	5	0	5

09 Jan 2001

2001 Burn  
Shrub Study (Eref)  
Shrub #

C-2 (control)  
L x W x H (cm)

1	27	x	23	x	23
2	48	x	39	x	27
3	28	x	23	x	17.5
4	24	x	18	x	18
5	38	x	30	x	17
6	25	x	18	x	18
7	34	x	18	x	18
8	42	x	26	x	28
9	21	x	19	x	15
10	45	x	41	x	20

Cactus Acre #

1	12	0	4
2	9	0	7
3	9	0	4
4	19	0	4
5	5	1	4
6	8	0	2
7	11	0	6
8	8	0	2
9	8	0	11
10	4	0	3

# Shrub Study

Shrub #

(old control 4) for 2000 Burn		
3-B		
L x W x H		
1	30 x 26 x 25	<del>34 x 17 x 18</del>
2	34 x 17 x 18	<del>36 x 16 x 26</del>
3	36 x 16 x 26	<del>27 x 17 x 21</del>
4	27 x 17 x 21	<del>30 x 20 x 23</del>
5	30 x 20 x 23	<del>35 x 7 x 18</del>
6	35 x 7 x 18	<del>27 x 19 x 20</del>
7	27 x 19 x 20	
8	40 x 12 x 29	
9	38 x 23 x 18	
10	37 x 19 x 20	

2001 Burn

Oppo Patch #

02	
01	
03	
04	original none from gopher, we moved it
05	nothing, moved gopher
06	
07	
08	
09	
10	

3-B  
(old control 4)

L I D  
21 1 2

2 0 12

7 0 3

6 0 2

6 0 6

1 0 6

7 0 2

1 0 1

4 0 0

11 0 5



(old control 3)

# 2001 Burn Shrub Study (Eref)

~~4-B~~ 4-B


#	<u>L</u> × <u>W</u> × <u>H</u>
1	42 × 33 × 21
2	25 × 20 × 24
3	40 × 24 × 22
4	58 × 36 × 33
5	36 × 37 × 23
6	26 × 21 × 19
7	33 × 14 × 21
8	39 × 17 × 22
9	29 × 19 × 18
10	18 × 16 × 27

# 2001 Burn Oppo Study Patch #

1  
2  
3  
4  
5  
6  
7  
8  
9  
10

(old control 3 for 2000  
Burn)

4-B

<u>L</u>	<u>I</u>	<u>D</u>
10	1	9
24	1	0
7	0	1
20	0	8
5	1	5
4	1	3
8	 1	0
9	1	6
17	1	3
14	0	8

Data Collection Date 23 Aug 2001 Recorder N. Kaplan

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W X H (cm)	Dead L x W x H (cm)	Resprout <del>L x W x H</del> (cm)
23	Burn	1	2001	Eref	1	30x21x13	NONE	✓
					2	43x38x22	NONE	✓
					3	35x9x24	NONE	disturbed by gopher burrow ✓
					4	38x21x16	NONE	✓
					5	32x28x23	NONE	✓
					6	28x9x13	8x4x15	✓
					7	41x27x23	NONE	✓
					8	32x20x22	NONE	✓
					9	27x27x23 18x6x21	9x9x15	✓
					10	47x22x22	NONE	✓

needs  
ctrl  
use  
headers  
from file  
make  
real  
burn Shrub 01, x15

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W X H (cm)	Dead L x W x H (cm)	Resprout <del>L x W x H</del> (cm)
23	Control	1	2001	Eref	1	62x44x29	NONE	✓
					2	47x36x21	NONE	✓
					3	46x21x23	NONE	✓
					4	47x19x22	25x11x22	possibly spider mite webbing around ✓
					5	30x22x19	NONE	dead area ✓
					6	40x11x26	NONE	✓
					7	45x24x24	NONE	✓
					8	47x39x29	NONE	✓
					9	47x33x25	NONE	✓
					10	44x22x23	NONE	✓

## BURN STUDY - SHRUB DIMENSIONS

Data Collection Date 23 Aug 2001Recorder N. Kaplan

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W x (cm) H	Dead L x W x (cm) H	Resprout <del>L x W x (cm) H</del>
23	Burn	2	2001	Eref	1	26x21x 27	15x13x8	✓
					2	33x16x 20	9x6x21	✓
					3	35x16x 21	NONE	✓
					4	18x13x17	NONE	✓
					5	39x22x24	NONE	✓
					6	48x15x25	NONE	✓
					7	51x18x 18	10x5x20	✓
					8	45x39x 22	NONE	✓
					9	39x11x 22	45x14x15	✓
					10	47x34x31	5x5x20	✓
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W x (cm) H	Dead L x W x (cm) H	Resprout <del>L x W x (cm) H</del>
23	Control	2	2001	Eref	1	42x14x23	NONE	✓
					2	43x39x21	NONE	✓
					3	28x26x16	NONE	✓
					4	22x11x22	NONE	✓
					5	36x20x18	NONE	✓
					6	42x30x21	NONE	✓
					7	23x8x25	11x12x19	✓
					8	51x37x30	NONE	✓
					9	13x6x18 and 4x3x13	11x13x11	✓
					10	28x17x24	41x28x22	✓

## BURN STUDY - SHRUB DIMENSIONS

Data Collection Date 27 Aug 2001 Recorder D. Welch & D. Canham

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L x W (cm)	Dead L x W (cm)	Resprout <del>L x W</del> (cm)
23	BURN	7	2001	Ereb	1	33x21x19.5	None	✓
					2	53x17x29	None	✓
					3	19x10x20	15x12x17	✓
					4	48x39x19.5	2x3x16	✓
					5	26x13x30	None	✓
					6	13x8x15.5	None	✓
					7	14x9x22	None	✓
					8	37x11x21	None	✓
					9	30x22x22	None	✓
					10		None	✓

Spider mite web

## BURN STUDY - SHRUB DIMENSIONS

Data Collection Date 29 Aug 2001 Recorder D. Canter + D. Welch

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W (cm)	Dead L x W (cm)	Resprout <del>L x W (cm)</del>
27	Control	4	2001	EREF	1	55 x 42 x 25	NONE	✓
					2	44 x 25 x 21	19 x 13 x 7	✓
					3	20 x 19 x 16	NONE	✓
					4	40 x 46 x 23	NONE	✓
					5	NAIL LYING ON GROUND - NO EREF in vicinity		
					6	24 x 24 x 26	NONE	✓
					7	17 x 12 x 19	NONE	✓
					8 9	50 x 44 x 17	6 x 19 x 18	✓
					10	30 x 18 x 26	NONE	✓
					8	17 x 15 x 25	NONE	✓
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W (cm)	Dead L x W (cm)	Resprout <del>L x W (cm)</del>
					1			
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			

**BURN STUDY - SHRUB DIMENSIONS**Data Collection Date 27 Aug 2001 Recorder D. Canham + D. Welch

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L x W (cm)	Dead L x W (cm)	Resprout L x W (cm)
23	BURN	3	2001	EREF	1	31 x 14 x 23	NONE	✓
				EREF	2	42 x 35 x 23	NONE	✓
				EREF	3	35 x 23 x 22	NONE	✓
				EREF	4	24 x 16 x 25	NONE	✓
				EREF	5	19 x 12 x 20	NONE	✓
				EREF	6	19 x 15 x 23	17 x 5 x 20	17 x 5 x 21
				EREF	7	46 x 18 x 31	10 x 6 x 10	✓
				EREF	8	ABSENT	—	
				EREF	9	35 x 35 x 22	NONE	✓
					10	21 x 21 x 19	7 x 7 x 18	✓

section 27 pre-burn 2001.

L. Hartley  
N. Kaplan

D:SGS-LTER Field Station/Field Studies/Burn Studies/Shrub Study/Shrub Study-FireStudy-datasht

# BURN STUDY - SHRUB DIMENSIONS

Plot 3C for 2001

Date April 5, 2001

4: C for 2000

Species Eref

Species \_\_\_\_\_

Shrub#	Live	Dead	Resprout	Live	Dead	Resprout
1	36 x 29 x 23					
2	44 x 34 x 20					
3	51 x 38 x 17					
4	22 x 8 x 21					
5	42 x 25 x 22					
6	37 x 22 x 21					
7	42 x 30 x 19					
8	39 x 25 x 17					
9	53 x 26 x 30					
10	60 x 44 x 24					
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

dormant

*Section 27*

D:SGS-LTER Field Station/Field Studies/Burn Studies/Shrub Study/Shrub Study-FireStudy-datasht

*L. Hartley*  
*N. Kaplan*

**BURN STUDY - SHRUB DIMENSIONS**

Plot 4C for 2001

Date April 6, 2001

3C for 2000

Species EREF

Species \_\_\_\_\_

Shrub#	Live	Dead	Resprout	Live	Dead	Resprout
1	47X40X25					
2	39X19X21					
3	26X12X9					
4	39X24X22					
5	15X10X17					
6	32X33X22					
7	23X16X14					
8	25X15X17					
9	29X22X18					
10	33X19X24					
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						



## BURN STUDY - SHRUB DIMENSIONS

Data Collection Date 05 SEPT 2002 Recorder N. Kaplan, C. Meglsson

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
23	B	1	2001	Eref	1	29x21x18	6x5x5	yes
				Eref	2	9x6x35	15x25x7	yes
				Eref	3	17x13x15	15x9x15	yes
				Eref	4	16x13x12	12x4x9.5	yes
				Eref	5	31x19x17	17x14x12.5	yes
				Eref	6	38x36x18	16x14x11.5	yes
				Eref	7	20x11x15	8x7x9.5	yes
				Eref	8	34x19x17	17x11x11	yes
				Eref	9	14x10x13	10x8x14.5	yes
				Eref	10	44x23x27	28x11x23	yes
	↓	↓	↓					
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
23	C	1	2001	Eref	1	24x21x23	16x13x13	yes
					2	41x22x27	19x18x14.5	yes
					3	31x10x16	12x9x7	yes
					4	25x12x24	12x6x1	yes
					5	28x17x15.5	7x9x6	yes
					6	38x7x27	5x5x3	yes
					7	22x8x23	11x11x14.5	yes
					8	43x30x24	21x20x25	yes
					9	11x9x18	18x6x13	yes
					10	48x47x25	17x13x19	yes
	↓	↓	↓	↓				

## BURN STUDY - SHRUB DIMENSIONS

Data Collection Date 05 Sept 2002 Recorder N. Kaplan, C. Maglasson

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
23	C	2	2001	EREF	1	48x40x22	15x10x11	Yes
					2	36x32x24	14x13x6	Yes
					3	12x8x27	24x23x22	Yes
					4	46x28x25	25x20x16	Yes
					5	38x16x20	9x9x10	Yes
					6	35x11x19	19x7x6	Yes
					7	51x32x29	15x10x7.5	Yes
					8	40x10x26	18x16x15	Yes
					9	43x13x21	17x6x14	Yes
					10	22x20x19	14x13x11	Yes
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
23	B	2	2001	EREF	1	27x22x12	9x7x5	Yes
					2	35x34x19	10x7x8	Yes
					3	Could not Find Marker		
					4	26x16x18	13x8x8	Yes
					5	20x4x15	10x4x4	Yes
					6	5x2x18	14x9x13	Yes
					7	24x16x7.5	10x6x13.5	Yes
					8	28x26x18	5x3x16	Yes
					9	37x22x21	9x8x17	Yes
					10	43x28x16	14x8x16.5	Yes

## BURN STUDY - SHRUB DIMENSIONS

Data Collection Date 05 Sept 2002 Recorder N. Kaplan, C. Meglason

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
<del>27</del> 27	C	3	2001	EREF	1	34x27x19	8x5x11	Yes
					2	47x30x19	10x7x16	Yes
					3	24x16x15	9x8x10	Yes
					4	49x39x27	20x8x13	Yes
					5	32x27x20	8x7x5	Yes
					6	MISSING NAIL		
					7	26x22x17	13x7x12	Yes
					8	25x20x25	14x6x15	Yes
					9	37x20x22	14x8x12	Yes
					10	49x37x24	14x14x20	Yes
	✓	✓	✓	✓				
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
27	C	4	2001	EREF	1	33x27x19	8x7x13	Yes
					2	1x1x6	19x17x10	1 sprout
					3	21x16x13	10x6x8.5	Yes
					4	36x32x25	11x6x14	Yes
					5	26x11x23	5x3x4	Yes
					6	44x31x22	12x7x4	Yes
					7	23x10x20	6x5x3	Yes
					8	30x15x23	6x6x16	Yes
					9	13x6x10	13x11x10	Yes
					10	26x25x23	5x3x15	Yes
	✓	✓	✓	✓				

**BURN STUDY - SHRUB DIMENSIONS**Data Collection Date 05 Sept 2002 Recorder N. Kaplan, C. M. J. Nilsson

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
23	B	4	2001	EREF	1	30x18x16	12x8x11	Yes
					2	35x20x19	12x9x19	Yes
					3	27x21x14	7x7x8	Yes
					4	36x34x17	13x8x6	Yes
					5	29x13x18	20x12x12	Yes
					6	19x17x22	12x4x9.5	Yes
					7	20x17x21.5	10x4x9	Yes
					8	29x18x18	4x2x14	Yes
					9	27x14x15	4x2x3.5	Yes
					10	10x10x18	13x7x5	Yes
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
23	B	3	2001	EREF	1	26x14x14	20x5x6	Yes
					2	35x19x14	9x5x6	Yes
					3	29x17x18	6x4x17	Yes
					4	15x12x13.5	5x5x1	Yes
					5	12x10x16	5x3x10	Yes
					6	22x16x19	13x8x10.5	Yes
					7	24x23x18	7x5x15	Yes
					8	N/A	5x3x1	NO
					9	35x27x20	7x5x10.5	Yes
					10	23x22x15	8x7x6.5	Yes

Pre-Burn

Section 4 Year Burned 2002Today's Date 07 Feb 2002Treatment Burn Replicate 1Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	21	11.5	11				
2	14	12	11				
3	16	15	15.5				
4	33	29.5	24				
5	46.5	27.9	20.5				
6	38	37	20				
7	35	33.5	21				
8	41.5	25.5	26				
9	41.5	22	19				
10	32.5	25.5	20.5				

Section 4 Year Burned 2002Today's Date 07 Feb 2002Treatment Control Replicate 1Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	20	18	16				
2	27.5	20	14				
3	40	20.5	21				
4	32	29.5	18.5				
5	62	55.5	22.5				
6	39	27.5	26				
7	54	47	24				
8	24.5	20	21.5				
9	41	22	24				
10	44.5	41	17.5				

Pre-Burn

Section 4 Year Burned 2002Today's Date 07 Feb 2002Treatment B Replicate 2Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	29	19	21				
2	27	26.5	18.5				
3	25	21	13.5				
4	30	26	23				
5	40	34.5	22.5				
6	33	28	21				
7	32	20	20				
8	30	17	15.5				
9	37	18	22				
10	43	34.5	23.				

Section \_\_\_\_\_ Year Burned 2002Today's Date 07 Feb 2002Treatment Control Replicate 2Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	25	23	19.5				
2	42	31	18				
3	29.5	28	19				
4	48	38	24				
5	28	25	20.5				
6	33	17.5	20				
7	31	28	16				
8	24	20	13.5				
9	25	20	19				
10	26	16	18.5				

Pre-Burn

Section 4 Year Burned 2002Today's Date 07 Feb 2002Treatment B Replicate 3Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	34	27	15				
2	35	30.5	19				
3	23.5	19.5	12				
4	40	37	25.5				
5	25.5	22	18				
6	23	16	18				
7	24.5	21	16				
8	27	21	17				
9	57	41	25.5				
10	38	36	16				

Section 4 Year Burned 2002Today's Date 07 Feb 2002Treatment Control Replicate 3Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	25	24	14				
2	19	17	15.5				
3	24	21	13				
4	28	28	23				
5	45	28	21				
6	24	18	17				
7	66	54	29				
8	44	32	21				
9	41	41	24				
10	30.5	22.5	15				

Pre-Burn.

Section 4 Year Burned 2002Today's Date 07 Feb 2002Treatment Burn Replicate 4Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	33	24	17				
2	37	28	17.5				
3	49	38	26.5				
4	32	28	19				
5	21.5	16.5	14				
6	30	24	19				
7	37	28.5	19				
8	25.5	22.5	16				
9	38	36	20.5				
10	27	21	17				

Section 4 Year Burned 2002Today's Date 07 Feb 2002Treatment Control Replicate 4Shrub Species Gusa

Shrub #	LIVE			resprout check if yes	DEAD		
	length	width	height		length	width	height
1	31.5	25	20				
2	35	31	21				
3	43	40	24.5				
4	28.5	24	15.5				
5	36.5	33.5	23				
6	52	46	26				
7	41	24	24				
8	33	32	17.5				
9	45	41	31				
10	41	20	19				



## BURN STUDY - SHRUB DIMENSIONS

Data Collection Date 22 AUG 2002 Recorder N. Kaplan, N. Anderson

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W x H (cm)	Dead L x W x H (cm)	Resprout <del>yes or no</del>
	C	1	2002	Gusa	1	18x13x9	19x18x18	yes
	C	1	2002	Gusa	2	19x15x7	26x18x13	yes
	C	1	2002	Gusa	3	20x16x14	36x29x24	yes
	C	1	2002	Gusa	4	20x19x18	26x20x22	yes
	C	1	2002	Gusa	5	32x23x17	56x53x28	yes
	C	1	2002	Gusa	6	23x18x20	41x24x27	yes
	C	1	2002	Gusa	7	30x22x12	59x45x24	yes
	C	1	2002	Gusa	8	16x12x12	20x17x24	yes
	C	1	2002	Gusa	9	n/a	37x22x24	no
	C	1	2002	Gusa	10	32x20x12	37x29x22	yes
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W x H (cm)	Dead L x W x H (cm)	Resprout <del>yes or no</del>
	B	1	2002	—	1	nail removed by cattle		
				Gusa	2	3x2x2	7x7x5	yes
				Gusa	3	2x1x4	7x4x4	yes 2 branches
				(?)	4	n/a	18x11x13	no
				Gusa	5	height = 3cm	21x15x9	yes (1 branch)
				Gusa	6	12x8x7	23x21x12	yes
				Gusa	7	8x8x10	24x16x8	yes
				?	8	n/a	21x17x7	no
				?	9	n/a	24x15x5	no
				?	10	n/a	13x11x8	no

## BURN STUDY - SHRUB DIMENSIONS

Data Collection Date 22 Aug 2002 Recorder N. Kaplan, Seth Ratering

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W x H (cm)	Dead L x W x H (cm)	Resprout <del>L x W (cm)</del> yes or no
	C	2	2002	Gusa	1	23x21x15	24x20x19	yes
					2	n/a	39x33x19	no
					3	28x26x13	27x24x19	yes
					4	34x28x19	49x34x27	yes
					5	20x17x11	29x23x19	yes
					6	15x10x9	30x27x20	yes a few leaves
					7	6x6x5	30x23x14	yes a few leaves
					8	20x8x10	21x17x14	yes
					9	18x12x8	19x17x20	yes
	✓	✓	✓	✓	10	10x10x12	15x13x20	yes
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W x H (cm)	Dead L x W x H (cm)	Resprout <del>L x W (cm)</del> yes or no
	B	2	2002		1	18x16x11	15x10x6	yes
					2	13x15x9	17x14x6	yes
					3	n/a	15x6x4	no
					4	13x19x9	19x9x7	yes
					5	25x14x8	15x15x6	yes
					6	n/a	19x18x6	no
					7	10x8x6	17x13x7	yes
					8	10x6x7	10x13x4	yes
					9	8x7x6	24x16x8	yes
	✓	✓	✓		10	n/a	n/a	no

## BURN STUDY - SHRUB DIMENSIONS

Data Collection Date 8-23-02

Recorder C Meglason

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W x H (cm)	Dead L x W x H (cm)	Resprout <del>L x W (cm)</del> yes or no
	Control	3	02	GUSA	1	12x8x6	22x22x13	New Growth Dead
					2	11x9x3	15x14x13	Yes New Growth Dead
					3	10x8x6	25x21x16	Yes
					4	13x9x5	31x28x20	Yes
					5	N/A	43x31x20	NO
					6	N/A	31x21x17	NO
					7	N/A	67x50x26	NO
					8	N/A	56x40x22	NO
					9	N/A	40x38x26	NO
					10	N/A	37x26x14	NO
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W x H (cm)	Dead L x W x H (cm)	Resprout <del>L x W (cm)</del> yes or no
	Burn	3	02	GUSA	1	12x9x8	18x15x7	Yes
					2	17x13x12	21x13x13	Yes
					3	12x10x9	11x7x14	Yes
					4	13x13x13	23x18x12	Yes
					5	N/A	16x15x8	NO
					6	15x12x11	17x12x6	Yes
					7	N/A	7x5x2	NO
					8	12x5x6	13x5x5	Yes
					9	N/A	22x17x4	NO
					10	18x15x6	21x19x18	Yes

## BURN STUDY - SHRUB DIMENSIONS

Data Collection Date

8-23-02

Recorder

C. Medeiros

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W x H (cm)	Dead L x W x H (cm)	Resprout <del>L x W (cm)</del>
	Burn	4	2002	GUSA	1	N/A	20x18x4	NO
					2	N/A	27x11x6	NO
					3	N/A	31x22x6	NO
					4	N/A	17x17x8	NO
					5	3x3x3	13x6x3	Yes
					6	N/A	14x12x1	NO
					7	N/A	28x26x19	NO
					8	16x11x11	14x10x5	Yes
					9	NAXNAX4	18x18x7	16 growth stem
					10	11x10x8	18x13x15	Yes
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W x H (cm)	Dead L x W x H (cm)	Resprout <del>L x W (cm)</del>
	Control	4	2002	GUSA	1	20x18x8	25x25x19	Yes
					2	N/A	28x24x20	NO
					3	18x18x4	37x37x24	Yes
					4	20x16x7	25x20x17	Yes
					5	20x21x10	31x31x22	Yes
					6	28x24x9	45x41x25	Yes
					7	28x23x11	33x31x28	Yes
					8	9x9x10	29x27x15	Yes
					9	18x13x10	51x44x32	Yes
					10	15x10x6	33x26x17	Yes

## BURN STUDY - SHRUB DIMENSIONS

Data Collection Date 13 Feb 2003 Recorder M. Lindquist, N. Kaplan

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
265W	Burn	1	2003	Chvi	1	44x31x18	n/a	n/a
					2	45x34x11	n/a	
					3	31x25x7	N/A	
					4	39x29x14	N/A	
					5	52x42x10	N/A	
					6	45x32x7	12x3x6	
					7	55x39x14	N/A	
					8	48x37x10	N/A	
					9	51x47x13	N/A	
					10	45x39x16	N/A	
Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
265W	Burn	2	2003	Chvi	1	52x48x7	—	N/A
					2	35x31x14	—	
					3	38x34x16	—	
					4	44x42x15	—	
					5	31x31x12	—	
					6	50x42x12	17x6x12	
					7	35x19x13	—	
					8	49x41x15	—	
					9	34x28x15	—	
					10	37x20x11	—	



## BURN STUDY - SHRUB DIMENSIONS

Data Collection Date 13 Feb 2003 Recorder \_\_\_\_\_

% Burn	Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No	
10	26SW	Burn	3	2003	Chvi	1	32x27x8	—	—	gravel
80						2	54x47x18	—	—	
10						3	42x38x19	—	—	
80						4	30x26x12	—	—	gravel
90						5	28x23x10	9x5x6	—	
10						6	35x28x11	—	—	
50						7	35x22x15	—	—	
50						8	42x31x14	—	—	
20						9	39x26x20	—	—	
30						10	27x18x16	—	—	gravel
% Burn	Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No	
30	26SW	Burn	4	2003	Chvi	1	44x40x22	—	—	
10	1					2	30x26x15	—	—	
30						3	40x16x9	—	—	
15						4	38x36x15	—	—	
30						5	35x33x17	—	—	
10						6	38x35x14	—	—	
0						7	39x36x19	—	—	
85						8	32x28x11	—	—	gravel
40						9	31x8x12	8x4x7	—	
10						10	42x39x15	—	—	gravel

**BURN STUDY - SHRUB DIMENSIONS**Data Collection Date 16 April 2003Recorder Steve Bledsoe  
Vanessa Davis  
Theresa Hopson

Section	Treatment	Rep (1-4) transect	Year of Burn	Species	Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
	C	2	2003	CHVI	1	50 x 47.5 x 26	—	—
					2	56 x 48 x 26	—	—
					3	68 x 55 x 23	—	—
					4	47 x 44 x 20	—	—
					5	49 x 40 x 25	—	—
					6	40 x 37 x 18	—	—
					7	67 x 61 x 30	—	—
					8	70 x 63 x 28	—	—
					9	53 x 52 x 18	—	—
					10	32 x 31 x 14	—	—
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
	C	1	2003	CHVI	1	54 x 33 x 13	—	—
					2	51 x 40 x 27	—	—
					3	30 x 28 x 16.5	—	—
					4	43 x 14.5 x 9.5	—	—
					5	40 x 26 x 15	—	—
					6	45 x 22 x 23	—	—
					7	33 x 20 x 16	—	—
					8	53 x 41.5 x 16	—	—
					9	51 x 49 x 20.5	—	—
					10	42 x 36 x 20	—	—

13 April 03

**BURN STUDY - SHRUB DIMENSIONS**Data Collection Date 18 Apr 2003 Recorder B. Blom J. Weaver

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
	C	4	2003		10	34x22x17		
					9	57x32x24		
					8	40x36x12		
					7	28x23x12		
					6	41x40x13		
					5	41x26x13		
					4	22x34x24		
					3	27x22x9		
					2	38x11x9		
					1	50x33x17		
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
	C	3	2003		1	72x51x22		
					2	47x42x16		
					3	53x32x23		
					4	56x43x22		
					5	44x31x17		
					6	68x39x23		
					7	26x26x13		
					8	59x22x22		
					9	41x35x16		
					10	106x40x17		



**BURN STUDY - SHRUB DIMENSIONS**Data Collection Date 11 Aug 2003 Recorder Laura Jamison

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
26 SW	Burn	2	2003	Chvi	1	40x39x 24		
					2	30x29x 12		
					3		27x14x5	NO
					4	55x43x 19		
					5	36x23 x17		
					6	6x4x3	18x15x 4	
					7	18x17x 14		
					8	24x25x 15		
					9	39x26x 14		
					10			
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
26 SW	Burn	1	2003	chvi	1	39x38x 26		
					2		31x22x 9	
					3	33x24x 16		
					4	26x28x 16		
					5	22x19x 16		
					6		19x10x 5	
					7	49x25x 19		
					8	30x26x 17		
					9	40x42x 18		
					10	35x32x 15		

Cows graze the site → missing stakes and tags

## BURN STUDY - SHRUB DIMENSIONS

Data Collection Date 8-11-03Recorder Blecker / WeaverSde was grazed during summer

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
26SW	Burn	(4)	2003	CHV1	1	30x24x19	16x7x17	yes
					2	23x21x19	—	yes
					3	not located		
					4	—	19x15x25	no
					5	19x6x13	22x9x9	no
					6	2x2x4	25x22x9	yes
					7	not located		
					8	—	18x11x4	no
					9	not located		
					10	25x18x16	—	yes
Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
26SW	Burn	(3)	2003	CHV1	1	31x20x15	—	yes
					2	34x28x15	—	yes
					3	39x28x15	—	yes
					4	20x16x13	—	yes
					5	16x13x10	—	yes
					6	could not locate		
					7	24x16x11	—	yes
					8	24x22x15	—	yes
					9	38x33x16	—	yes
					10	23x22x21	—	yes

**BURN STUDY - SHRUB DIMENSIONS**Data Collection Date 8-11-03Recorder Brandon Vogel

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
	C	2	03	chv1	1	61x42x29	—	—
					2	58x32x26	—	—
					3	75x52x24	—	—
					4	42x40x22	—	—
					5	42x38x33	—	—
					6	47x40x15	—	—
					7	73x68x26		
					8	68x64x24	—	—
					9	64x52x22	—	—
					10	50x59x26	—	—
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
	C	1	03	chv1	1	63x51x18	—	—
					2	60x60x24	—	—
					3	30x27x16	—	—
					4	44x29x17	—	—
					5 <del>GUSA</del>	41x50x23	—	—
					6	51x40x26	—	—
					7	40x26x18	—	—
					8	55x51x18	—	—
					9	71x52x25	—	—
					10	42x35x21	—	—

Cattle grazed on sites

**BURN STUDY - SHRUB DIMENSIONS**

Data Collection Date 8.11.03 Recorder Heather Walkerton & Adam Gaylord

Section	Treatment	Rep (1-4)	Year of Burn	Species	Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
	C	4	2003	CHVI	1	44 x 32 16		
					2	55 x 55 20		
					3	38 x 44 15		
					4	31 x 30 16		
					5	43 x 28 14		
					6	34 x 42 13		
					7	32 x 34 20		
					8	38 x 36 16		
					9	56 x 31 23		
					10	47 x 37 22		
Section	Treatment	Rep (1-4)	Year of Burn		Shrub #	Live L X W X H (cm)	Dead L x W X H (cm)	Resprout Yes/No
	C	3	2003	CHVI	1	75 x 54 x 28		
					2	cant find		
					3	48 x 41 x 16		
					4	53 x 33 x 31		
					5	40 x 41 x 18		
					6	71 x 62 x 17		
					7	29 x 23 x 16		
					8	64 x 45 x 18		
					9	68 x 43 x 15		
					10	53 x 38 x 20		

\*Cattle grazed at both C344

# Burn Study - 2001 Burn

## Shrub $\pm$ Oppo Mortality

Data collected 09 Jan 2001

by D. Milchunas, M. Lindquist, L. Hartley,  
 $\pm$  N. Kaplan.

Transects 1  $\pm$  2 - off 2 track  
N of 114, past intersection of  
114  $\pm$  45.

(Transect 1 south of transect 2)

---

Transects 3  $\pm$  4 Control are  
old transect ~~3~~  $\pm$  ~~4~~ controls  
from 2000 Burn Sites.

Transects 3  $\pm$  4 Burn are old  
transects ~~4~~  $\pm$  ~~3~~ Controls  
from 2000 Burn sites.

Control

Cont 1

T1

L

Shrnrb

W H

cm

1	41	34	19
2	40	32	20
3	44	42	26
4	53	51	24
5	35	22	20
6	24	19	28
7	38	32	25
8	39	28	32
9	34	27	19
10	31	20	26

Lactur

L	I	D
5	0	0
3	0	2
8	1	6
11	0	0
6	0	8
5	0	4
3	0	2
6	0	0
7	0	0
4	0	1



09 Jan 2001

Burn 2001 - Burn Transect #1

Shrub Study - (EREF)

Shrub #                      L x W x W (cm)

1                      36 x 30 x 20

2                      27 x 23 x 21

3                      43 x 31 x 20

4                      32 x 20 x 15

5                      26 x 17 x 23

6                      22 x 20 x 14

7                      33 x 25 x 27

8                      30 x 13 x 21

9                      40 x 22 x 22

10                      33 x 27 x 21

2001 Burn B-2  
Shrub Study (Eref)

Shrub #

L x W x H

1	33 x 19 x 20
2	22 x 13 x 21
3	30 x 17 x 21
4	23 x 21 x 20
5	36 x 20 x 18
6	49 x 21 x 26
7	23 x 12 x 20
8	43 x 29 x 26
9	45 x 21 x 28
10	42 x 23 x 17



09 Jan 2001

2001 Burn

C-2 (control)

Shrub Study (Eref)

Shrub #L x W x H (cm)

1	27	x	23	x	23
2	48	x	39	x	27
3	28	x	23	x	17.5
4	24	x	18	x	18
5	38	x	30	x	17
6	25	x	18	x	18
7	34	x	18	x	18
8	42	x	26	x	28
9	21	x	19	x	15

10 Cactus Porten #

45 x 41 x 20

	<u>L</u>	<u>W</u>	<u>D</u>
1	12	0	4
2	9	0	7
3	9	0	4
4	19	0	4
5	5	1	4
6	8	0	2
7	11	0	6
8	8	0	2
9	8	0	11
10	4	0	3

(old control 4)  
for 2000 Burn

3-B

# Shrub Study

Shrub #

L x W x H

1	30 x 26 x 25	<del>34 x 17 x 18</del>
2	34 x 17 x 18	<del>36 x 16 x 26</del>
3	36 x 16 x 26	<del>27 x 17 x 21</del>
4	27 x 17 x 21	<del>30 x 20 x 23</del>
5	30 x 20 x 23	<del>35 x 7 x 18</del>
6	35 x 7 x 18	<del>27 x 19 x 20</del>
7	27 x 19 x 20	
8	40 x 12 x 29	
9	38 x 23 x 18	
10	37 x 19 x 20	

(old control 3)

2001 Burn  
Shrub Study (Eref)

~~3-2~~ 4-P

#	<u>L</u> × <u>W</u> × <u>H</u>
1	42 × 33 × 21
2	25 × 20 × 24
3	40 × 24 × 22
4	58 × 36 × 33
5	36 × 37 × 23
6	26 × 21 × 19
7	33 × 14 × 21
8	39 × 17 × 22
9	29 × 19 × 18
10	18 × 16 × 27



We did not measure  
shrubs & count cactus  
pads on Control 3 and 4  
on 09 Jan 2000 for the  
2001 Burn.

These measurements will be  
collected later in Jan. 2001

09 Jan 2001

~~Burn~~ 2001 Burn - Burn T-1  
Cactus Study

<u>Cactus #</u>	<u>L</u>	<u>I</u>	<u>D</u>
1	3	0	5
2	9	0	6
3	10	0	9
4	6	0	6
5	6	1	4
6	13	0	8
7	9	0	6
8	14	0	5
9	11	0	1
10	9	0	3

(Transect 2  
Burn)

2001 Burn ~~VZ~~ - B2

09 Jan 2001

<u>Cactus Patch #</u>	<u>L</u>	<u>I</u>	<u>D</u>
1	11	0	5
2	4	0	5
3	11	0	6
4	7	0	2
5	14	0	3
6	24	0	4
7	8	0	4
8	7	1	7
9	12	0	2
10	5	0	5

~~2001 Burn~~ 2001 Burn

~~4-B~~ 3-B  
(old control 4)

Oppo Patch #

L I D  
21 1 2

02

2 0 12

03

7 0 3

original gone  
from gopher, we  
moved it

04

6 0 2

nothing, moved  
gopher

05

6 0 6

06

1 0 6

07

7 0 2

08

1 0 1

09

~~5~~ 4 0 0

10

11 0 5



(old control 3 for 2000  
Burn)

2001 Burn

4-B

Oppo Study

Patch #

	<u>L</u>	<u>I</u>	<u>D</u>
1	10	1	9
2	24	1	0
3	7	0	1
4	20	0	8
5	5	1	5
6	4	1	3
7	<del>8</del>	<del>1</del>	0
8	9	1	6
9	17	1	3
10	14	0	8